

ROCKY FLATS

ENVIRONMENTAL RESTORATION

UPDATE



A PERIODIC UPDATE ON ROCKY FLATS CLEANUP • AUGUST 1991

Operable Unit 3: Off-Site Contamination

INTRODUCTION

Operable Unit 3 (OU3), involving investigation of off-site contamination, is the only OU located outside the Rocky Flats Plant (RFP) boundaries. Although the extent of all off-site areas that could potentially belong in OU3 is as yet undetermined, certain sites have been identified. OU3 currently includes four individual hazardous substance sites (IHSSs), formerly known as Solid Waste Management Units, where RFP releases may have contaminated soils and/or reservoir sediments/waters with plutonium and americium:

- IHSS 199 - Contamination of the Land's Surface (soils);
- IHSS 200 - Great Western Reservoir;
- IHSS 201 - Standley Reservoir; and
- IHSS 202 - Mower Reservoir.

The U.S. Department of Energy (DOE) recently issued the *Final Past Remedy Report*, which discusses IHSS 199. This document is available for public examination at the information repositories listed in this *Update*. A companion document, the *Historical Information Summary and Preliminary Health Risk Assessment*, focuses on IHSSs 200 - 202 and is expected to be available by the end of August 1991.

SOILS

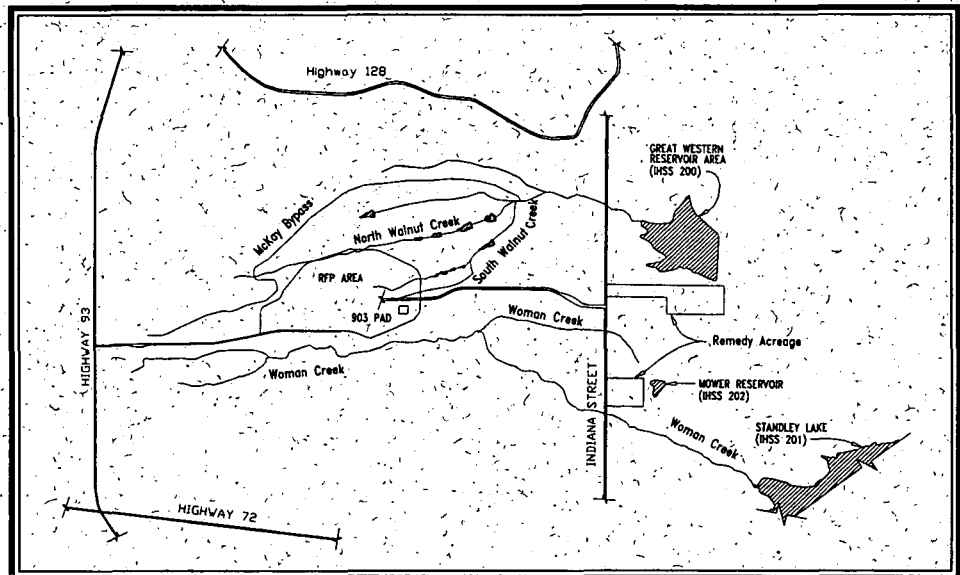
Preliminary studies of the land near RFP have shown that soils in some areas contain plutonium and americium at levels higher than what can be attributed to worldwide fallout from nuclear testing. These studies concluded that most of the plutonium in off-site soils was deposited by dust blown from the 903 Pad, which was capped with asphalt in 1969 to prevent further wind dispersion from that location.

Part of IHSS 199 consists of 350 acres of land east of RFP known as the remedy acreage. The "remedy" was prescribed as a

result of a 1975 lawsuit filed against Rockwell International Corporation, Dow Chemical Company, and the United States of America by the Church (McKay) plaintiffs and Great Western Venture partnership. The plaintiffs claimed that their land had been damaged by radioactive contaminants from RFP. In December 1984, the plaintiffs and defendants reached a remedy settlement (the

implement the remedy:

- Detail the effectiveness of the remedy; and
- Provide a health risk assessment that identifies public health risk associated with potential exposure prior to completing any site remediation, during implementation, and after completion of the remedy.



Settlement Agreement - amended in July 1985) that called for ripping, plowing, and tilling affected soils to reduce plutonium concentrations. The Agreement also stipulated the transfer of about 250 acres of land to Jefferson County and about 100 acres to the City of Broomfield. These lands are not open to the public at the current time. Approximately 100 to 110 acres of Jefferson County land have been remediated to date.

The *Final Past Remedy Report* was prepared in response to the requirements of the Interagency Agreement (IAG), which outlined the following objectives for the report:

- Detail the history of the remedy ordered by the U.S. District court;
- Detail the activities conducted to date to

The *Final Past Remedy Report* concludes that remediation implemented thus far has reduced plutonium concentrations in the soils, although attempts to revegetate the land have been only partly successful because of inadequate precipitation and other environmental complications. The *Final Past Remedy Report* also states that, according to a preliminary health risk assessment performed, IHSS 199 does not appear to pose any immediate threat to human health.

RESERVOIR SEDIMENTS

Sediments at the bottom of Great Western and Standley Reservoirs contain plutonium that is thought to have resulted from activities at RFP from the 1950s

through 1970s. Mower Reservoir is also being studied because of its proximity to RFP. The *Historical Information Summary and Preliminary Health Risk Assessment* assesses such contamination and potential health risks and was also prepared in response to IAG requirements as shown below:

- Submit all known and accumulated data describing, detailing, or defining contamination within the reservoir(s) and tributaries of the reservoir(s), including surface and groundwater sources; and
- Submit a health risk assessment documenting the risks derived from all potential exposures associated with a no-action alternative.

Among other conclusions, the *Historical Information Summary and Preliminary Health Risk Assessment* states that plutonium and americium are the only known contaminants attributable to RFP that have been measured in the reservoirs. Plutonium in the bottom sediments of Great Western and Standley Reservoirs has been buried by subsequent sedimentation. According to routine water quality monitoring results, water quality in these two reservoirs has not been measurably impacted by plutonium in the sediments. Regular analysis of residential tap water derived from these reservoirs indicates that plutonium concentrations are below Colorado Department of Health drinking water standards.

Great Western Reservoir serves as the municipal water supply for the City of Broomfield, while Standley Reservoir supplies water to the cities of Thornton, Northglenn and Westminster. Mower Reservoir is privately owned and is used for agricultural purposes. ■

Groundwater Protection and Monitoring

The *Draft Final Groundwater Protection and Monitoring Program (GPMP) Plan* for the Rocky Flats Plant (RFP) has been completed and released for a 60-day public comment period that ends August 20, 1991. The *GPMP* addresses and integrates groundwater management activities, regulatory requirements, and public concerns.

The *GPMP* describes 1) major aquifers, 2) movement of groundwater, 3) interactions of groundwater with surface water, 4) uses of groundwater at the site, 5) contamination identified, 6) potential sources of groundwater contamination, 7) anticipated impacts of decontamination and decommissioning, 8) impacts of the requirements, and 9) activities to monitor groundwater at the site. It also analyzes the impacts of DOE orders, regulations, and agreements on the groundwater program.

Groundwater monitoring for radionuclides (different forms of radioactive elements) and other chemical constituents has been conducted at RFP since 1960 when the first monitoring wells were installed. However, much of the information gathered from that time through 1986 did not meet the stringent requirements of the Resource Conservation and Recovery Act (RCRA) of 1976, as amended by the Hazardous and Solid Waste Act in 1984, and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980.

To satisfy the RCRA and CERCLA guidelines, the U.S. Department of Energy (DOE) made major changes in the groundwater monitoring program in 1986, when DOE, the Colorado Department of Health (CDH), and the U.S. Environmental Protection Agency (EPA), identified the need for an expanded and upgraded groundwater monitoring system.

The groundwater monitoring program at RFP now includes 259 wells that are routinely monitored. DOE uses these wells to measure the concentration of hazardous constituents, assess the rate of contaminant movement, and evaluate the extent of contaminant plumes in the uppermost aquifer within RFP boundaries.

Groundwater monitoring and characterization activities undertaken since 1986 have focused primarily on collecting data to comply with RCRA and CERCLA requirements. Future activities will also comply with requirements of the Interagency Agreement (IAG) of 1991 and Colorado standards for unconfined groundwater.

In compliance with DOE regulations, the *GPMP* will be reviewed annually and updated every three years to reflect changing conditions and regulations at RFP. The public is encouraged to review and comment on the *GPMP*, which is available in the information repositories listed on page 4. Please send comments to Beth Brainard, Public Affairs Officer, U.S. Department of Energy, Rocky Flats Office, P.O. Box 928, Golden, Colorado 80402-0928. Attention: *GPMP Plan Comments*. ■

Public Invited to Use Information Repositories

The following information repositories contain current information, technical reports, and reference documents on environmental restoration at the Rocky Flats Plant:

Rocky Flats Public Reading Room
Front Range Community College Library
3645 West 112th Avenue
Level B, Center of Building
Westminster, Colorado 80030
303-469-4435

Hours: Mon. - Tues. 12:00 pm - 8:00 pm
Wed. 10:00 am - 4:00 pm
Thurs. - Fri. 9:00 am - 4:00 pm

Colorado Department of Health
Hazardous Materials and Waste
Management Division
4210 East 11th Avenue, Room 351
Denver, Colorado 80220
303-331-6733

Hours: Mon. - Fri. 8:00 am - 5:00 pm

Rocky Flats Environmental Monitoring Council
1536 Cole Boulevard, Suite 325
Denver West Office Park, Building 4
Golden, Colorado 80401
303-232-1966

Hours: Mon. - Fri. 8:30 am - 5:00 pm

EPA Superfund Records Center
999 18th Street, Suite 500
Denver, Colorado 80202
303-293-1807

Hours: Mon. - Fri. 7:30 am - 4:30 pm

Boulder Public Library
1000 Canyon Boulevard
Boulder, Colorado 80302
303-441-3100

Hours: Mon. - Thurs. 9:00 am - 9:00 pm
Fri. - Sat. 9:00 am - 6:00 pm
Sun. 12:00 pm - 6:00 pm

Community Radiation Monitoring Network

The U.S. Department of Energy and EG&G (DOE/EG&G) are installing three community-operated and publicly-accessible air monitoring networks in communities surrounding the Rocky Flats Plant (RFP) as part of the newly-formed Community Radiation Monitoring Program. These networks, which will be managed by local math or science teachers, will collect air quality data and display the results from instrumentation recording the data at the sites listed below.

The goal of the monitoring network is to provide opportunities for area residents to view the radiation levels in their communities at any given time. The program will help interested citizens 1) learn about the basic concepts of radiation, including levels and significance, and 2) understand to what extent emissions from RFP may contribute to environmental radiation in the area. The program results will supplement data from air monitoring stations already established both on and off the Plant.

The main type of radiation from materials that RFP handles is alpha radiation emitted by plutonium, americium, and uranium. Alpha radiation has low penetrating ability: a piece of paper or clothing can stop it. To be harmful, alpha radiation must be taken into the body through inhalation or ingestion. For this reason, environmental surveillance programs at RFP focus on identifying radiation levels in air, soil, groundwater, and surface water. For more information on the air quality and the groundwater management programs, see the adjacent articles.

Monitoring networks will be installed at the following locations beginning in late 1991:

- **South Midway Park, Broomfield**, located southwest of the intersection of Midway Boulevard and Kohl Street;
- **Countryside Recreation Center, Westminster**, located at 10470 Oak Street, west of Wadsworth and 100th Avenue; and
- **Jefferson County Library, Standley Lake Branch**, located at 8485 North Kipling Street. This library opens August 17, 1991.

A panel of technical experts from the local communities, the U.S. Environmental Protection Agency (EPA), the Colorado Department of Health (CDH), and DOE/EG&G chose these sites. The selection was based on factors such as weather (e.g., temperature, wind speed and direction, and barometric pressure) and distance from obstructions, roadways, and heavy industry or construction. In addition to the three chosen sites, DOE has requested funds to place air monitoring networks in three other communities beginning in 1992 and 1993.

Each community-operated air monitoring network will employ a part-time station manager and backup manager. These managers, who will be selected from local math and science teachers, will be responsible for operating the equipment, collecting the samples, preparing and submitting the samples to a designated laboratory for analysis, and gathering and providing a detailed summary of the results to RFP.

The overall program manager may also serve as a liaison between the communities and RFP by organizing special town or school meetings to inform the local communities about environmental monitoring issues and to obtain community feedback on the program. ■

Air Quality Plan

The *Final Draft Air Quality Management Plan (AQMP)* has been completed and released for a 60-day public comment period that ends September 9, 1991. This AQMP addresses and integrates activities, regulatory requirements, self-improvement projects, and oversight review committee concerns about air quality management.

The AQMP focuses on potential air emissions of both radioactive and nonradioactive materials. Potential airborne radioactive pollutants include plutonium, americium, uranium, and tritium. Potential nonradioactive hazardous air pollutants include beryllium and solvents. Other contaminants found in stack and/or vent emissions are total suspended particulates (TSPs) – fine particles of dust, mist, or fumes that have the potential to be deposited in the lungs – and oxides of nitrogen.

There are more than 100 buildings at RFP that have potential to discharge some type of atmospheric emission. These emissions, which result in, or have the potential for resulting in, the release of contaminants to the atmosphere include fabricating, painting, cleaning, and assembling of plutonium, beryllium, uranium, and metals such as stainless steel and aluminum; remedial activities that disturb and resuspend dust and soil containing plutonium particles; and various research and development projects.

The AQMP describes requirements of DOE orders, EPA and CDH regulations, agreements among the agencies, and recommendations and suggestions from internal and external review groups.

To meet or exceed DOE guidance, the AQMP will be reviewed and updated annually to reflect changing conditions and regulations at RFP. The public is encouraged to review and comment on the AQMP, which is available in the information repositories listed on page 4. Please send comments to Beth Brainard, Public Affairs Officer, U.S. Department of Energy, Rocky Flats Office, P.O. Box 928, Golden, Colorado 80402-0928, Attention: AQMP Comments. ■

Calendar of Events

- **Rocky Flats Environmental Monitoring Council Meeting (RFEMC):** 7:00 p.m., September 24, 1991, Front Range Community College, Student Lounge, 3645 West 112th Avenue, Westminster.
- **General Rocky Flats Plant Tours:** August 12 and September 9, 1991.
Please call 966-2011 one week in advance for reservations.
- **Quarterly Environmental Restoration Meeting (Tentative):** 7:00 – 10:00 p.m., August 21, 1991, Front Range Community College, 3645 West 112th Avenue, Westminster.
- **Public Information Workshop on *Proposed Final Plan for Prevention of Contaminant Dispersion*:** 7:00 – 9:00 p.m., August 13, 1991, Westminster City Park Recreation Center, 10455 Sheridan Boulevard, Westminster.
- **Public Comment Meeting on *Plan for Prevention of Contaminant Dispersion*:** 7:00 – 9:00 p.m., September 5, 1991, Westminster City Park Recreation Center, 10455 Sheridan Boulevard, Westminster.
- **Public Comment Period on *Plan for Prevention of Contaminant Dispersion*:**
Public comment period runs from July 30 through September 27, 1991.
The *PPCD* is available for review at the information repositories.
- **Public Comment Period on the *Draft Final Groundwater Protection and Management Program (GPMP) Plan*:** Public comment period runs from June 20 through August 20, 1991.
The *GPMP Plan* is available for review at the information repositories.
- **Public Comment Period on the *Final Draft Air Quality Management Plan (AQMP)*:**
Public comment period runs from July 8 through September 9, 1991.
The *AQMP* is available for review at the information repositories.

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for general information or
303-966-6159 to have your name
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New Documents

- *EG&G Rocky Flats Plant Environmental Restoration Monthly Report* for April 1991, for May 1991, and for June 1991
- *Final Past Remedy Report – Operable Unit No. 3 – IHSS 199*
- *Draft Final Groundwater Protection and Management Program (GPMP) Plan*
- *Final Draft RFP Air Quality Management Plan (AQMP)*
- *Plan For Prevention Of Contaminant Dispersion*

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